

## **ABSTRACT**

*At this time the average human activity in a room with air conditioner such as in offices or lectures. Being in a room with air conditioner for a long time can cause humans to be exposed to dry air, it can cause several diseases such as dry nose, flu, cough, sinusitis, and skin irritation that causes dry skin. To determine the humidity that suits the room requires a prototype Smart Air Humidifier system that functions as monitoring and control of cage in the room. The sensor used is a DHT22 sensor as a humidity reader in the room with an average error value of 1.0%, and an HC-SR04 sensor as a sensor to measure the water level in the humidifier tube with an average error of 0.6%. This study used a PIR (passive infrared) sensor to detect human movement as an active factor in the humidifier system. The Fuzzy method is used to determine the active duration of the humidifier based on the humidity in the room. The range of cage values in the test results varies from 33.5%RH to 51.2%RH. The final results showed that the humidifier output was in accordance with Fuzzy validation and the prototype smart air humidifier successfully raised and maintained humidity to the range of 40-60%RH. The data is sent from the microcontroller to the Telkom IoT Platform web data base through the MQTT protocol with an average delay of 3.3ms.*

*Keywords: DHT22, HC-SR04, Fuzzy Logic, Internet of Things.*